# Government Support for MT in Germany

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## 1  Status Quo

Existing MT systems are still not mature. Significant amounts of additional research must be conducted. The promotion of such research by the German Ministry for Research and Technology keeps within the bounds of the principle that commercial systems should be developed and marketed by industry without governmental support. This is the fundamental principle of the free market system. In the end, the increase in quality of an MT system is the result of the necessary interaction between the commercial producer and the real user.

What the government should do - and this holds true not only for Germany - is to improve the framework and support special tasks in research and development of MT systems.

In this spirit, the Commission of European Communities promoted the EUROTRA project. Incidentally, if one looks at EUROTRA from this point of view, there is no doubt that the total funding of about $60 million provided by the Commission and the Member States between 1982 and 1990 were a very good R&D investment. Today we know more about machine translation than ever before. And we have now - especially in Germany - a good potential of scientists for work in this field. We have a greater R&D capacity for MT research and education in our universities. Thanks to EUROTRA there is an MT centre in Saarbrücken. Together with the two accompanying centers in Berlin and Stuttgart, Germany holds a truly leading position in MT research in Europe. This is the real merit of EUROTRA - not the "golden" promises on paper, good only for grant applications. Under the circumstances, nobody could seriously believe that a high quality MT system for 72 language pairs could be built within that project. But there remains a tremendous scientific challenge.

The German component of EUROTRA, two accompanying research projects and a basic research project on the construction of a multilingual text generator are examples of the possible involvement of national or international promotion of R&D activities. Interestingly enough, a leading computer manufacturer has spent far more money in Germany on a single project - LILOG - than the Federal Ministry for Research and Technology spent on EUROTRA.

The goal of all such actions at this pre-commercial stage is clear: increasing the R&D

capacities first in the universities and research centers for the training of better-educated scientists. This forms the best basis for industrial MT development.

## 2   Next Steps

For the preparation of the next steps of our efforts a study on trends and perspectives in the MT area was conducted by SCS/CAP GEMINI SOGETI in Hamburg.

What follows is a brief summary of the recommendations made by SCS:

1. The main goal of research has to be fully automatic machine translation of high quality. For the present, human aids should be integrated.

2. Electronic dictionaries for projects with different theoretical approaches and for different applications should be the focal point of the R&D activities. Relevant research should include questions of design and elements of content.

3. There is a strong need for evaluation criteria.

4. There is a strong need for software tools to make R&D in MT more efficient. This holds especially in the electronic dictionary area.

5. Efforts relating to education and training - especially of computer linguists - must be increased.

6. There should be more compound projects between universities and industry. Universities have to remain at the pre-commercial level. The goal of these projects might be large scale prototype developments designed to prove their usefulness in practice and as a source of commercial developments.

7. The promotion of R&D for MT should have a long-term perspective including:

    • simultaneous translation from German to several languages (and vice versa),
    • introduction of language translation systems into telecommunication networks,
    • simultaneous speech translation by a mobile translation machine.

Regarding this mobile translation machine, it is important to mention the decision of the Federal Ministry of Research and Technology to undertake two broad-based studies of the possibility and feasibility of a mobile speech-to-speech translation machine, which we call VERBMOBIL. We know that this is a very long-term undertaking and that - despite the excellent amount of know-how in the field of MT in Germany - we need international cooperation, especially with Japan and the United States. And for this futuristic project, government funds are absolutely necessary - as in Japan for ATR and EDR.

In accordance with the recommendations of the SCS study, we introduced in our new program for Specialized Information a special action line for the promotion of R&D activities in MT. The catalogue of concrete actions includes further R&D activities in the pre-commercial area of MT systems and work on electronic dictionaries. The language pair which is the most important one at this point is German-English and the general presence of German as a language in as many MT systems as possible is another central goal.

To this end, we are examining the possibilities of bringing qualified scientists to Germany from all over the world to work on one of the R&D topics concerning MT together with our groups. Within the planned promotion concept we will spend funds for young scientists from Germany and from all over the world to conduct their own research work in this field and to participate in the training of students and young researchers. We believe that this could probably be a major measure to stimulate new ideas and further the progress in MT development.